

What is claimed is:

1. An electrically conductive confined space ventilator conduit for supplying air through a port to the interior of an enclosure, said confined
5 space conduit comprising at least three longitudinal tubular sections, including one central section and two outer sections; at least one of said outer sections having a cylindrical shape and having a first diameter, said central section having a non-cylindrical shape so as to minimize obstruction to a person entering or leaving a port in an enclosure, said central section being of a size
10 and shape which causes a reduction in air flow rate of no more than about 10 percent relative to the flow rate in a second conduit having a diameter substantially the same as said first diameter, wherein said confined space conduit is electrically conductive.
- 15 2. The confined space conduit of claim 1, wherein said confined space conduit comprises five longitudinal tubular sections joined end-to-end, including a pair of intermediate sections joining the outer sections to said central section, said central section having the general cross-section of a segment of a circle, and wherein said intermediate sections extend angularly
20 away from said central section, the cross-section of each said intermediate section changing throughout its length from the shape of said central section at one end thereof to the shape of a said respective outer section at the other end thereof.
- 25 3. The confined space conduit of claim 1, wherein said outer sections are aligned on a common axis which is parallel but offset from the axis of said central section.
- 30 4. The confined space conduit of claim 1, further comprising means on the outside of said central section for releasable attachment of said confined space conduit within a port to an enclosure.

5. The confined space conduit of claim 1, wherein, when said confined space conduit is mounted within a substantially circular port with the central section of said confined space conduit lying adjacent a peripheral edge of the port, the central section extends toward a radial center of the port less than half that which would occur if the outer section having the cylindrical shape were located within the port and adjacent the same peripheral edge.
6. The confined space conduit of claim 1, wherein the outer section having the cylindrical shape is about eight inches in diameter, and wherein the confined space conduit is adapted to be mounted within a port about twenty inches in diameter, and wherein the central section extends toward a radial center of the port by about 3.5 inches.
7. The confined space conduit of claim 1, wherein the port is a circular manhole and said central section has an outer surface which has a radius substantially equal to the radius of said manhole.
8. The confined space conduit of claim 1, wherein said confined space conduit comprises a conductive polymer.
9. The confined space conduit of claim 1, wherein the surface resistivity of said confined space conduit is less than about 1.0×10^{11} ohms per square.
10. The confined space conduit of claim 1, further comprising at least one grounding wire connection device for facilitating connection of said device to electrical ground.
11. An electrically conductive confined space ventilator conduit, comprising:
a hollow first section having other than a full circle shape in cross section, said first section being formed of a conductive plastic material, wherein said confined space conduit can be used to ventilate an enclosure via

mounting in a port to the enclosure with less obstruction of the port than if said first section had a hollow full circle cross section of equal area.

12. The confined space conduit of Claim 11, wherein said conductive polymer comprises a conductive polyethylene composition.

5 13. The confined space conduit of Claim 12, further comprising a connecting device for connecting said port to an electrical ground.

14. The confined space conduit of Claim 13, wherein said confined space conduit has a first end and a second end, and at least one said connecting device is located proximate of said first or second end.

10 15. The confined space conduit of Claim 3, wherein said connecting device comprises a lug, said lug being formed of a conductive material and being either molded into said confined space conduit or bolted thereto.

15 16. The confined space conduit of claim 1, wherein said first section is operatively connected to hollow second and third sections, said first section having a minimum cross sectional area about 90% or more of the cross sectional area of said second and third sections.

20 17. The confined space conduit of claim 16, wherein said first section is operatively connected to said second and third sections by hollow transitional sections connected at opposite ends of said first section, said transitional sections having substantially the same cross-sectional shape and area as said first section at their connection point with said first section and having a substantially circular cross-sectional shape at their connection point with said second and third sections.

25 18. A method of electrically grounding an electrically conductive confined space ventilation conduit, comprising:

connecting a grounding wire to a rigid walled conduit, said conduit comprising a hollow first section forming a portion of a circle in cross section, said first section being formed of a non-metallic conductive material, wherein

said conduit can be used to ventilate a confined space with less obstruction of the port to said confined space than if said first section had a hollow circular cross section of equal area.

5 19. The method of claim 18, wherein the grounding wire is operatively connected to a second component, and said second component is operatively connected to ground.

20. The method of claim 18, wherein said connecting step comprises connecting a ground wire to at least one electrically conductive connecting point on the conduit.

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21. A kit for grounding for an electrically conductive confined space ventilator conduit, comprising:

15 at least one electrically conductive connector for connecting an electrically conductive confined space ventilator conduit to ground or to a grounded device, and an electrically conductive confined space ventilator conduit, wherein said electrically conductive confined space ventilator conduit comprises a rigid hollow first section having other than a full circle shape in cross section, said first section being formed of a non-metallic conductive material, wherein said conduit can be used to ventilate an enclosure via mounting in a port to the enclosure with less obstruction of the port than if said first section had a hollow full circle cross section of equal area.

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22. The kit of claim 21, wherein said electrically conductive connector comprises a conductive housing, said housing comprising a receiving member for receiving and gripping an electrically conductive wire to create an electrical contact between said conductive housing and an electrically conductive wire.

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23. The kit of claim 22, wherein said conductive housing may be bolted or formed into said confined space conduit for creating an electrically conductive connection thereto.

24. The kit of claim 23, wherein said kit comprises at least two of said electrically conductive connector, wherein at least one of said at least two electrically conductive connectors is not directly connected to said electrically conductive confined space ventilator conduit.

5 25. The kit of claim 24, wherein said connector comprises at least one of the group consisting of aluminum and brass.

26. A method of ventilating an enclosure with a manhole entrance with minimum obstruction at the manhole, comprising the steps of:

10 (a) providing a conduit having outer open-ended sections which are substantially circular in cross-section, and an intermediate section which is non-circular in cross-section and which obstructs the cross-sectional area of the manhole by not more than about 10 percent, wherein said conduit is electrically conductive and non-metallic; and

15 (b) locating the conduit within the manhole entrance such that the intermediate portion extends from inside the enclosure to outside the enclosure.

20 27. A method according to claim 26, further comprising the step of connecting one outer end of said conduit to an air blower, and supplying air under pressure to the enclosure.

25 28. A method according to claim 27, wherein said air blower is rated at about 1000 CFM to about 1500 CFM and supplies air to the enclosure in a range of about 700-800 CFM.

29. An electrically conductive, non-metallic conduit for a ventilation system, comprising a rigid conduit, said conduit formed of a material that is at least electrically dissipative.

30. The conduit of claim 29, comprising an ethylene-butene copolymer polyethylene resin with a conductive additive.

31. The conduit of claim 30, comprising a hollow first section having other than a full circle shape in cross section.

5 32. The conduit of claim 30, comprising a cylindrical section bent at an approximately ninety degree angle.

33. The conduit of claim 29, wherein the surface resistivity of said conduit is less than about 1.0×10^{11} ohms per square.

10 33. The conduit of claim 31, wherein the surface resistivity of said conduit is less than about 1.0×10^{11} ohms per square.

34. The conduit of claim 29, wherein the surface resistivity of said conduit is less than about 1.0×10^8 ohms per square.

35. The conduit of claim 31, wherein the surface resistivity of said conduit is less than about 1.0×10^8 ohms per square.

15 36. The conduit of claim 29, wherein the electrical resistance of said conduit is less than about $4 \times 10^3 \Omega$.

37. The conduit of claim 31, wherein the electrical resistance of said conduit is less than about $4 \times 10^3 \Omega$.

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